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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,507	01/11/2002	Makarand P. Gore	10012194 -1	9291

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No. 10/044,507	Applicant(s) GORE ET AL.	
	Examiner Julian Mercado	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-15 and 19 is/are rejected.
- 7) ☐ Claim(s) 3-5 and 16-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hockaday et al. (U.S. 2001/0049045 A1).

Regarding independent claims 1 and 19, Hockaday et al. teaches a fuel-concentration indicator in a fuel cell comprising a volume of fuel solution and a dye mixture responsive to the fuel concentration, “[t]he fuel may have colored dyes so that as fuel is used it will give a color change indication of fuel status since the remaining fuel will be darker”. (par. [0035]) The dye mixture reads on the claimed “chemical-indicator means”. (applies to independent claim 19) The volume of fuel is contained within an anode reservoir, i.e. ampoule. (par. [0036], applies to dependent claim 2)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1745

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday et al. as applied to claims 1, 2 and 19 above, in view of Vieira et al. (U.S. Pat. 5,098,477).

Regarding dependent claims 6, 7, 13 and 14, while Hockaday et al. specifically teaches that the fuel may have colored dyes (*ib*), the patentees do not explicitly teach Acid Yellow 1, Solvent Blue 37 and Acid Red 29 as the dye mixture components. However, Vieira et al. teaches Acid Yellow, Solvent Blue and Acid Red pigments of varying Color Index numerical designations as dyes for an aqueous or organic, i.e. methanol solution. (col. 7 line 17-41) Thus, at the time the invention was made, the skilled artisan would have found obvious to employ without undue experimentation the claimed colored dyes in order to allow for the color change indication of fuel status specifically called for by Hockaday et al.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday et al. as applied to claims 1, 2 and 19 above, in view of Bauer (U.S. Pat. 4,523,852).

Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday and Vieira et al. as applied to claims 1, 2, 6, 7 and 19 above, and further in view of Bauer.

The teachings of Hockaday et al., and Hockaday and Vieira et al., each in view of Bauer will be discussed in parallel.

Regarding independent claim 12 and dependent claims 10, 11 and 13-15, while Hockaday et al. specifically teaches a transparent window to allow for viewing of the fuel status (par.

Art Unit: 1745

[0035]), the patentees do not explicitly teach a color indicator bar or fuel indicator scale aligned with the color bar. However, Bauer teaches this alleged inventive feature insofar as a color chart [20] serves as a reference standard for comparison with a measured or observable value [40]. (col. 12 line 47 to col. 14 line 7) Note that the observed value [40] is aligned with the color bar in order to accurately compare it with the reference standard. As discussed above, Hockaday et al. specifically teaches that the fuel will be darker in color as it is consumed (*ib*), thus, the skilled artisan would find obvious to employ a color indicator bar or fuel indicator scale aligned with the color bar for reasons such as enhancing the visual perception of the fuel status window in Hockaday et al.'s invention. (see Bauer at col. 10 line 47-55)

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday et al. as applied to claims 1, 2 and 19 above, in view of Beecher et al. (U.S. Pat. 5,192,984)

Regarding dependent claim 8, while Hockaday et al. does not explicitly teach a photodiode and light-emitting device (LED), Beecher et al. teaches an LED/photodiode detector combination for measuring a proportional change in the concentration of analyte in a sample. (col. 2 line 67 et seq.) The skilled artisan would find obvious to employ a photodiode and light-emitting device in Hockaday et al.'s invention for reasons such as accurately measuring and calculating the concentration of the fuel sample via a known instrumental analysis method.

Regarding dependent claim 9, the claimed "control the release of the fuel solution" has not been given patentable weight, as such language is construed as a statement of intended use not requiring additional steps to be performed as well as not further limiting the claim to a particular structure.

Allowable Subject Matter

Claims 3-5 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record and to the examiner's knowledge do not teach or render obvious at least to the skilled artisan the instant invention regarding a dye chamber separated from the anode reservoir.

The examiner notes that Hockaday et al. teaches a selectively permeable membrane which is considered to be permeable to the fuel solution but not the dye mixture to the extent that the membrane is specifically permeable to methanol only and since the dye mixture is requisitely impermeable through this membrane in order for its color indication to be darker in the remaining fuel. (see par. [0020] et seq., par. [0052] and par. [0035] as discussed above) However, Hockaday et al. does not teach or suggest a dye chamber separated from the anode reservoir; instead, the dye is added directly to the fuel cell tank. (par. [0035])

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. 6,326,097 to Hockaday is cited of cumulative relevance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



jam

Patrick Ryan 
Supervisory Patent Examiner
Technology Center 1700